

**What is claimed is:**

1       1. A data driver of a display forming an image frame  
2 by sequentially scanning horizontal lines, the data driver  
3 comprising:

4            a shift register receiving image data of three primary  
5            colors in serial and outputting the image data of  
6            the three primary colors in parallel within each  
7            of scan durations of the horizontal lines;

8            a sample and hold register acquiring the image data  
9            from the shift register;

10          a gamma multiplexer outputting gamma reference voltages  
11            for the three primary colors in a sequence of the  
12            primary colors within each of the scan durations  
13            of the horizontal lines;

14          three digital-to-analog converters for gamma  
15            calibration, receiving the image data of the  
16            three primary colors from the sample and hold  
17            register and the gamma reference voltages for the  
18            three primary colors from the gamma multiplexer,  
19            and outputting calibrated image signals of the  
20            three primary colors, respectively; and

21          three buffers respectively receiving the calibrated  
22            image signals of the three primary colors from  
23            the three digital-to-analog converters, in the  
24            sequence of the primary colors.

1       2. A data driver of a display forming an image frame  
2 by sequentially scanning horizontal lines, the data driver  
3 comprising:

4       a shift register receiving image data of three primary  
5        colors in serial and outputting the image data of  
6        the three primary colors in parallel within each  
7        of scan durations of the horizontal lines;  
8       a sample and hold register acquiring the image data of  
9        the three primary colors from the shift register;  
10      a first multiplexer receiving the image data of the  
11       three primary colors from the sample and hold  
12       register and outputting them in a sequence of the  
13       primary colors within each of the scan durations  
14       of the horizontal lines;  
15      a second multiplexer outputting gamma reference  
16       voltages for the three primary colors in the  
17       sequence of the primary colors within each of the  
18       scan durations of the horizontal lines;  
19      a digital-to-analog converter for gamma calibration,  
20       receiving the image data from the first  
21       multiplexer and the gamma reference voltages from  
22       the second multiplexer, and outputting calibrated  
23       image signals of the three primary colors; and  
24      a buffer receiving the calibrated image signals from  
25       the digital-to-analog converter and outputting  
26       the calibrated image signals in the sequence of  
27       the primary colors.

1       3. A data driver of a display forming an image frame  
2       by sequentially scanning horizontal lines, the data driver  
3       comprising:  
4        a shift register receiving and outputting image data of  
5        the three primary colors in a sequence of the

6               primary colors within a scan duration of one of  
7               the horizontal lines;  
8               a sample and hold register acquiring the image data  
9               from the shift register;  
10              a gamma multiplexer outputting gamma reference voltages  
11              for the primary color in the sequence of the  
12              primary colors;  
13              a digital-to-analog converter for gamma calibration,  
14              receiving the image data from the sample and hold  
15              register and the gamma reference voltages from  
16              the gamma multiplexer, and outputting calibrated  
17              image signals of the three primary colors; and  
18              a buffer receiving the calibrated image signals from  
19              the digital-to-analog converter and outputting  
20              the calibrated image signals in the sequence of  
21              the primary colors.

1              4. A data driver of a display forming an image frame  
2              composed of sub-frames of three primary colors by  
3              sequentially scanning horizontal lines for each sub-frame,  
4              the data driver comprising:

5              a shift register receiving and outputting image data of  
6              one of the three primary colors within each of  
7              scan durations of the horizontal lines;  
8              a sample and hold register acquiring the image data  
9              from the shift register;  
10             a gamma multiplexer outputting gamma reference voltages  
11             for the primary color to which the image data  
12             from the shift register belongs;

13       a digital-to-analog converter for gamma calibration,  
14       receiving the image data from the sample and hold  
15       register and the gamma reference voltage from the  
16       gamma multiplexer, and outputting a calibrated  
17       image signal; and  
18       a buffer receiving the calibrated image signal from the  
19       digital-to-analog converter.